ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829

BRUCE RAUNER, GOVERNOR LISA BONNETT, DIRECTOR

MAJOR

217/782-0610

February 3, 2015

U. S. Environmental Protection Agency
Attention: 5WN - 16J Kevin Pierard, Chief
NPDES Programs Branch
Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

RECEIVED

FEB 06 2015

NPDES PROGRAMS BRANCH
EPA, REGION 5

Re: Springfield Metro Sanitary District
Sugar Creek STP
NPDES Permit No. IL0021971
Draft Permit Request for Approval

Dear Mr. Pierard:

In accordance with our agreement, we hereby submit for approval, a Draft Permit and Public Notice/Fact Sheet for the above subject discharger. The IEPA fully expects to receive either an approval letter or a letter stating objections to the Permit within 45 days of the date of this letter.

Any verbal comments should be directed to Brant Fleming at 217/782-0610.

Sincerely,

Richard E. Pinneo

Richard E. Pinneo, P.E.
Manager, Southern Municipal Unit, Permit Section
Division of Water Pollution Control

REP:BDF:11112101.bah

Attachments: Draft Permit, Public Notice/Fact Sheet, Additional Backup Material

cc: Records Unit

MAJOR

NPDES Permit No. IL0021971

Notice No. BDF:11112101.bah

Public Notice Beginning Date: **February 3, 2015**

Public Notice Ending Date: **March 5, 2015**

National Pollutant Discharge Elimination System (NPDES)
Permit Program

PUBLIC NOTICE/FACT SHEET
of
Draft Reissued NPDES Permit to Discharge into Waters of the State

Public Notice/Fact Sheet Issued By:

Illinois EPA
Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-0610

Name and Address of Discharger:

Springfield Metro Sanitary District
3000 North Eighth Street
Springfield, Illinois 62707

Name and Address of Facility:

Sugar Creek STP
3300 Mechanicsburg Road
Springfield, Illinois 62707
(Sangamon County)

The Illinois Environmental Protection Agency (IEPA) has made a tentative determination to issue a NPDES Permit to discharge into the waters of the state and has prepared a draft Permit and associated fact sheet for the above named discharger. The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice/Fact Sheet. All comments on the draft Permit and requests for hearing must be received by the IEPA by U.S. Mail, carrier mail or hand delivered by the Public Notice Ending Date. Interested persons are invited to submit written comments on the draft Permit to the IEPA at the above address. Commentors shall provide his or her name and address and the nature of the issues proposed to be raised and the evidence proposed to be presented with regards to those issues. Commentors may include a request for public hearing. Persons submitting comments and/or requests for public hearing shall also send a copy of such comments or requests to the Permit applicant. The NPDES Permit and notice numbers must appear on each comment page.

The application, engineer's review notes including load limit calculations, Public Notice/Fact Sheet, draft Permit, comments received, and other documents are available for inspection and may be copied at the IEPA between 9:30 a.m. and 3:30 p.m. Monday through Friday when scheduled by the interested person.

If written comments or requests indicate a significant degree of public interest in the draft Permit, the permitting authority may, at its discretion, hold a public hearing. Public notice will be given 45 days before any public hearing. Response to comments will be provided when the final Permit is issued. For further information, please call Brant Fleming at 217/782-0610.

The following water quality and effluent standards and limitations were applied to the discharge:

Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter I: Pollution Control Board and the Clean Water Act were applied in determining the applicable standards, limitations and conditions contained in the draft Permit.

The applicant is engaged in treating domestic wastewater for the City of Springfield and other communities.

The length of the Permit is approximately 5 years.

The main discharge number is 008. The seven day once in ten year low flow (7Q10) of the receiving stream, Sugar Creek is 1.5 cfs.

The design average flow (DAF) for the existing facility is 10.0 million gallons per day (MGD) and the design maximum flow (DMF) for the facility is 25.0 MGD. Treatment consists of screening, grit removal, activated sludge process, polishing lagoons, aerobic digestion and excess flow treatment. The design average flow (DAF) for the proposed facility is 15.0 million gallons per day (MGD) and the design

maximum flow (DMF) for the proposed facility is 37.5 MGD. Treatment consists of diversion of 37.5 MGD to screening, grit removal, activated sludge process, aerobic digestion, chemical addition facilities and all flows exceeding 37.5 MGD and up to 112.5 MGD are diverted to separate facilities consisting of grit removal, bar screening, clarification and disinfection.

This treatment works has an approved pretreatment program. There is 1 noncategorical SIUs and 1 CIUs.

This Reissued Permit does not increase the facility's DAF, DMF, concentration limits, and/or load limits.

This Permit recognizes and continues the year-round disinfection exemption approved by the IEPA on May 1, 1989 and reauthorized July 5, 2011. It is the IEPA's tentative decision that under Illinois Pollution Control Board regulations, the following reach of waterbody is not classified for primary contact use activities and is not subject to the fecal coliform water quality standard of 35 Ill. Adm. Code 302.209.

This draft permit does not contain requirements for disinfection of the discharge from discharge numbers(s) 008. Sugar Creek has been determined to be unsuited to support primary contact activities (swimming) due to physical, hydrologic or geographic configuration. Anyone knowing of primary contact activities occurring within this water segment is invited to submit comments to the IEPA. Comments should give the nature of the activities (i.e swimming, fishing, canoeing, etc.), the location and months of the year when these activities have been observed. The IEPA is also interested in obtaining information on the proximity of residential dwellings and the accessibility of the public to this water segment. Anyone with such information is asked to submit comments to the IEPA on this draft permit action. Instructions for submitting comments are contained earlier in this document.

Application is made for the existing discharge(s) which are located in Sangamon County, Illinois. The following information identifies the discharge point, receiving stream and stream classifications:

Discharge Number	Receiving Stream	Latitude	Longitude	Stream Classification	Integrity Rating
008	Sugar Creek	39° 47′ 37″ North	89° 34′ 55″ West	General Use	C
009	Unnamed tributary to Sugar Creek	39° 46′ 25″ North	89° 37′ 41″ West	General Use	Unrated
010	Sugar Creek	39° 47′ 37″ North	89° 34′ 55″ West	General Use	C
011	Sugar Creek	39° 47′ 37″ North	89° 34′ 55″ West	General Use	C

This permit authorizes discharge from 2 CSOs in accordance with 35 Ill. Adm. Code 306.305 into the following waters:

1. Unnamed tributary to Sugar Creek
2. Sugar Creek

To assist you further in identifying the location of the discharges(s) please see the table below:

Discharge No.	Name
009	Harvard Park Combined Over Flow
011	STP CSO

The stream segment(s), EOA-06, receiving the discharge from outfall(s) 008, 010 and 011 are on the 303(d) list of impaired waters.

The following parameters have been identified as the pollutants causing impairment:

Potential Causes	Uses Impaired
Alterations in stream-side vegetative cover (non-pollutant), boron, and total phosphorus	Aquatic life

To assist you further in identifying the location of the discharge(s) please see the attached map.

The discharge(s) from the facility is (are) proposed to be monitored and limited at all times as follows:

Discharge Number(s) and Name(s): STP Outfall 008 (Existing)

Load limits computed based on a design average flow (DAF) of 10.0 MGD (design maximum flow (DMF) of 25.0 MGD).

The effluent of the above discharge(s) shall be monitored and limited at all times as follows:

	LOAD LIMITS lbs/day DAF (DMF)*			CONCENTRATION LIMITS mg/L			
Parameter	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Regulation
$CBOD_5$	834 (2085)		1668 (4170)	10		20	35 IAC 304.120 40 CFR 133.102
Suspended Solids	1001 (2502)		2002 (5004)	12		24	35 IAC 304.120 40 CFR 133.102
pH	Shall be in the range of 6 to 9 Standard Units						35 IAC 304.125
Fecal Coliform	Monitor only (May through October)						35 IAC 309.146
Chlorine Residual						0.05	35 IAC 302.208
Ammonia Nitrogen: As (N)							35 IAC 355 and 35 IAC 302
March	125 (313)	317 (792)	450 (1126)	1.5	3.8	5.4	
April,May,Sept,Oct	125 (313)	317 (792)	334 (834)	1.5	3.8	4.0	
June-August	117 (292)	292 (730)	334 (834)	1.4	3.5	4.0	
Nov.-Feb.	250 (626)		450 (1126)	3.0		5.4	
Total Phosphorus (as P)	Monitor Only						35 IAC 309.146
Total Nitrogen	Monitor only						35 IAC 309.146

	Monthly Avg. not less than	Weekly Avg. not less than	Daily Minimum	
Dissolved Oxygen				
March-July	N/A	6.0	5.0	35 IAC 302.206
August-February	5.5	4.0	3.5	

*Load Limits are calculated by using the formula: 8.34 x (Design Average and/or Maximum Flow in MGD) x (Applicable Concentration in mg/L).

Discharge Number(s) and Name(s): STP Outfall 008 (Proposed)

Load limits computed based on a design average flow (DAF) of 15.0 MGD (design maximum flow (DMF) of 37.5 MGD).

The effluent of the above discharge(s) shall be monitored and limited at all times as follows:

	LOAD LIMITS lbs/day DAF (DMF)*			CONCENTRATION LIMITS mg/L			
Parameter	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Regulation
$CBOD_5$	1251 (3128)		2502 (6255)	10		20	35 IAC 304.120 40 CFR 133.102
Suspended Solids	1501 (3753)		3002 (7506)	12		24	35 IAC 304.120 40 CFR 133.102

pH	Shall be in the range of 6 to 9 Standard Units						35 IAC 304.125
Fecal Coliform	Monitor only (May through October)						35 IAC 309.146
Chlorine Residual						0.05	35 IAC 302.208
Ammonia Nitrogen: As (N)							35 IAC 355 and 35 IAC 302
March	188 (469)	475 (1188)	676 (1689)	1.5	3.8	5.4	
April,May,Sept,Oct	188 (469)	475 (1188)	500 (1251)	1.5	3.8	4.0	
June-August	175 (438)	438 (1095)	500 (1251)	1.4	3.5	4.0	
Nov.-Feb.	375 (938)		676 (1689)	3.0		5.4	
Total Phosphorus (as P)	125 (313)			1.0			35 IAC 304.123
Total Nitrogen	Monitor only						35 IAC 309.146

	Monthly Avg. not less than	Weekly Avg. not less than	Daily Minimum	
Dissolved Oxygen				
March-July	N/A	6.0	5.0	35 IAC 302.206
August-February	5.5	4.0	3.5	

*Load Limits are calculated by using the formula: 8.34 x (Design Average and/or Maximum Flow in MGD) x (Applicable Concentration in mg/L).

This Permit contains an authorization to treat and discharge excess flow as follows:

Discharge Number(s) and Name(s): 010 Treated Combined Sewer Outfall Proposed (Pond Over Flow – Flows from 37.5 MGD to 112.5 MGD)

Discharge Number(s) and Name(s): 010 Treated Combined Sewer Outfall Existing (Pond Over Flow – Flows from 25 MGD to 100 MGD)

Parameter	CONCENTRATION LIMITS (mg/L) Monthly Average	Regulation
BOD_5		40 CFR 133.102
Suspended Solids		40 CFR 133.102
Fecal Coliform	Daily Maximum Shall Not Exceed 400 per 100 mL	35 IAC 304.121
pH	Shall be in the range of 6 to 9 Standard Units	35 IAC 304.125
Chlorine Residual	0.75	35 IAC 304.208

This draft Permit also contains the following requirements as special conditions:

1. Reopening of this Permit to include different final effluent limitations.
2. Operation of the facility by or under the supervision of a certified operator.
3. Submission of the operational data in a specified form and at a required frequency at any time during the effective term of this Permit.
4. More frequent monitoring requirement without Public Notice in the event of operational, maintenance or other problems resulting in possible effluent deterioration.
5. Prohibition against causing or contributing to violations of water quality standards.

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6. Recording the monitoring results on Discharge Monitoring Report Forms using one such form for each outfall each month and submitting the forms to IEPA each month.

7. The provisions of 40 CFR Section 122.41(m) & (n) are incorporated herein by reference.

8. Effluent sampling point location.

9. Controlling the sources of infiltration and inflow into the sewer system.

10. A requirement to monitor and a limit of 0.05 mg/L for residual chlorine when it is used.

11. The Permittee implements and administers an industrial pretreatment program pursuant to 40 CFR Section 403.

12. Burden reduction.

13. Submission of annual fiscal data.

14. A requirement for biomonitoring of the effluent.

15. Submission of semi annual reports indicating the quantities of sludge generated and disposed.

16. An authorization of combined sewer and treatment plant discharges.

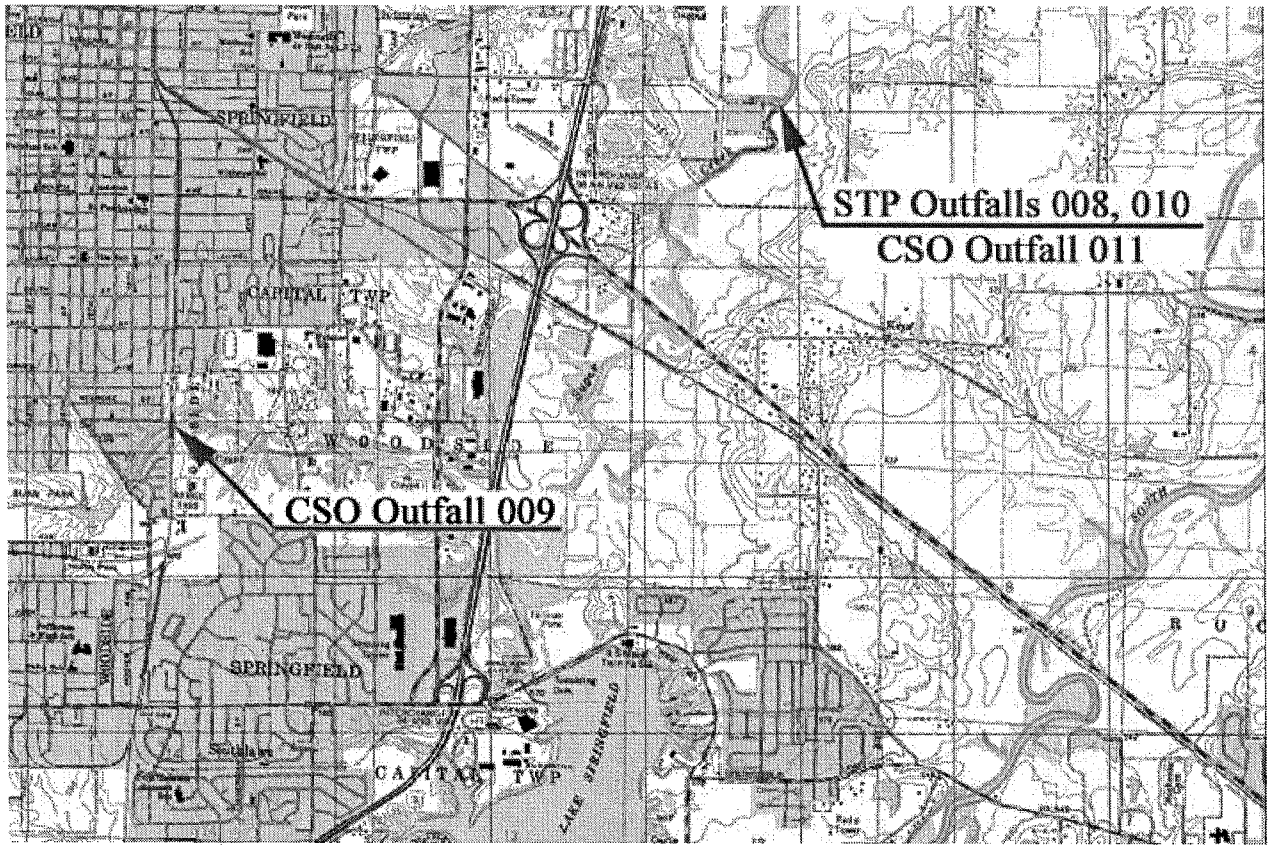
17. Reopening of this Permit to include revised effluent limitations based on a Total Maximum Daily Load (TMDL) or other water quality study.

18. CMOM.

19. Total nitrogen monitoring.

20. Notify agency of plant completion.

21. Stricter requirements shall be applicable.



Antidegradation Assessment
NPDES Permit No. IL0021971

The subject facility is proposing to replace the existing activated sludge facility with design average flow (DAF) of 10.0 MGD with a BNR activated sludge facility with a DAF of 15.0 MGD. The consultant has estimated that the wastewater being treated at the Sugar Creek facility will increase by 50% in the next twenty years. The District has given consideration to ammonia nitrogen and total phosphorus removal.

The facility is proposing to remove phosphorus and denitrify biologically. The NPDES permit will have a permit limit of 1.0 mg/L for phosphorous. Therefore, loading of phosphorus and nitrogen to the receiving stream will be reduced.

The information in this antidegradation assessment came from the January 2012 Wastewater Treatment Facilities Planning Report by Crawford, Murphy & Tilly, Inc.

Identification and Characterization of the Affected Water Body.

The subject facility discharges to Sugar Creek at a point where 1.5 cfs of flow exists upstream of the outfall during critical 7Q10 low-flow conditions. Sugar Creek (segment EOA-06) is a General Use water. Sugar Creek is not listed as a biologically significant stream in the 2008 Illinois Department of Natural Resources Publication *Integrating Multiple Taxa in a Biological Stream Rating System* at this locality, nor is it given an integrity rating in that report. Sugar Creek is listed on the draft 2010 Illinois Integrated Water Quality Report and Section 303(d) List as an impaired water body for aquatic life uses. Potential causes of aquatic life use impairment are given as alterations in stream-side vegetative cover (non-pollutant), boron, and total phosphorus. Sugar Creek is not designated as an enhanced water at this location pursuant to the dissolved oxygen water quality standard.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

The treated domestic waste that characterizes this proposed effluent would be similar to other treated effluents of largely domestic origin. Ammonia limits in the permit will be set at water quality standards, however; ammonia loading to the receiving stream will increase over existing background levels as the expanded effluent discharge will be allowed an average of 643.6 lbs/day (as a weighted average), up from the currently allowed level of 429.5 lbs/day (as a weighted average). Biochemical oxygen demand (BOD) permit limits will be set at the most stringent effluent standards applicable in 35 IAC 304.120. The stream will nonetheless experience an increase in loading in BOD as the expanded effluent discharge will be allowed an average of 3128 lbs/day, up from the currently allowed level of 2085 lbs/day. A dissolved oxygen model, submitted in the facility plan, was used to determine the impact of the expansion on the receiving stream. The model indicated that the dissolved oxygen difference between the current DAF of 10 MGD and the proposed DAF of 15 MGD will be 0.44 mg/L.

Phosphorus and total nitrogen loading will decrease as a result of the expanded facility removing phosphorus and denitrifying. The Agency is developing state water quality standards that will formulate the basis for future nutrient management strategies. Upon adoption of state standards and development of a management strategy, there may be additional nutrient reduction requirements imposed on this source. The Illinois Nutrient Standards Workgroup has been convened to develop nutrient standards and will strive to keep NPDES permitted dischargers aware of its findings, allowing them to anticipate future nutrient permit limits.

Fate and Effect of Parameters Proposed for Increased Loading.

The BOD and ammonia discharged by this facility will decay into simpler and harmless byproducts by naturally occurring organisms in the receiving stream. Some of the nitrogen originating in the ammonia will remain in the stream in the form of nitrates or organic nitrogen. Ammonia and dissolved oxygen standards will be met in the receiving stream.

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Purpose and Social & Economic Benefits of the Proposed Activity.

The proposed project continues to provide treatment capacity for future growth at the centralized treatment facilities that treats wastewater from Springfield, Rochester and the Lake Springfield area.

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.

The facilities Plan investigated the feasibility of land application of the additional flow (5 MGD). This would require at least 2,169 acres. It was determined to not be feasible to land apply the additional flow.

The facility has proposed constructing a biological system to denitrify and remove total phosphorus.

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities.

On June 12, 2012, the IDNR EcoCAT web-based tool was used and indicated that there were no endangered/threatened species present in the vicinity of the discharge. The IDNR EcoCAT web-based tool did not terminate the consultation because of the nearby presence of wetlands; however, IDNR did terminate the consultation on June 15, 2012 via letter.

Agency Conclusion.

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time the draft permit was written. We tentatively find that the proposed activity will result in the attainment of water quality standards; that all existing uses of the receiving stream will be maintained; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity will benefit the community at large by providing treatment capacity for future growth. Comments received during the NPDES permit public notice period will be evaluated before a final decision is made by the Agency.

NPDES Permit No. IL0021971

Illinois Environmental Protection Agency

Division of Water Pollution Control

1021 North Grand Avenue East

Post Office Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Reissued (NPDES) Permit

Expiration Date:

Issue Date:
Effective Date:

Name and Address of Permittee:

Springfield Metro Sanitary District
3000 North Eighth Street
Springfield, Illinois 62707

Facility Name and Address:

Sugar Creek STP
3300 Mechanicsburg Road
Springfield, Illinois 62707
(Sangamon County)

Receiving Waters: Sugar Creek

In compliance with the provisions of the Illinois Environmental Protection Act, Title 35 of the Ill. Adm. Code, Subtitle C, Chapter I, and the Clean Water Act (CWA), the above-named Permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the Permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

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